AD11™
APPLIANCE MODULE

USER MANUAL

20502/20120530 • AD11

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USER MANUAL AD11 DIN RAIL SWITCH

SAFETY WARNINGS

- The wiring of your electrical installation is live (230 V) and extremely dangerous. Never connect the module when plugged into the mains. Always turn off the main switch before starting the installation.
- This product is for professional use and should be installed by a certified installer.
- To prevent short circuits, this product should only be used inside and only in dry spaces. Do not expose the components to rain or moisture. Do not use the product close to a bath, swimming pool etc.
- Do not expose the components of your systems to extremely high temperatures or bright light sources.
- Do not open the product: the device contains live parts. The product should only be repaired or serviced by a qualified repairman.
- In case of improper usage or if you have opened, altered and repaired the product yourself, all guarantees expire. Haibrain does not accept responsibility in the case of improper usage of the product or when the product is used for purposes other than specified. Haibrain does not accept responsibility for additional damage other than covered by the legal product responsibility.
- Automatic switching devices provide comfort, but can also
be dangerous. They can surprise people or can ignite clothing hanging over an electric heat source. Please be careful and take appropriate measures to avoid accidents.

HOW DOES HAIBRAIN X-10 WORK?

Haibrain X-10 components use the existing mains wiring to communicate (using Haibrain X-10 signals). You can build a complete system using the three different kind of components of the Haibrain X-10 System:

1. Modules: These components will receive Haibrain X-10 signals and will switch or dim the attached lamp or appliance.
2. Controllers: These components will transmit Haibrain X-10 signals and thus will control the Modules.
3. Transmitters: Wireless components like remotes. The signals of these components will be received by a controller with transceiver functionality (IRRF 7243, TM13 or console of a Haibrain Security System). The Transceiver will translate the signals into Haibrain X-10 signals on the power line.

ADDRESSES

You can select up to 256 addresses by setting two code wheels on the modules. The two code wheels are dividing the address into a House Code (A .. P) and a Unit Code (1 .. 16). On Controllers the House Code is also selectable. When Modules and Controllers are set to the same House Code they will work together.

The Haibrain X-10 System contains many standardized commands whereby modules set to the same House Code will respond simultaneously (e.g. All lights on, all off).

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SIGNAL RANGE

Range of Haibrain X-10 signals over the Power Line and how to increase the range.
The Haibrain X-10 System is based on power line communication. The range of the Haibrain X-10 signals very much depends on the local circumstances. On average the range is a cable length of 80 meters.

If you have difficulties with the range of your Haibrain X-10 signals, please pay attention to the following facts:

1. When more than one phase is used for your electrical system, it is necessary to couple these phases for the Haibrain X-10 signals. For coupling you can use FD10 Phase Couplers/Filters. You only need to install a Phase Coupler/ Filter when your wall outlets and light switches are divided over more than one phase (more than one group is no problem). For bigger buildings or longer distances we advice you to use an active repeater instead of passive FD10's.

2. It is possible that Haibrain X-10 signals are attenuated by devices and lights which are connected to the power line. In a normal home situation this effect is negligible (the Haibrain X-10 system is using active gain control to eliminate the effects). However, it is possible that a particular device in your house is attenuating the signals so much that the range of Haibrain X-10 signals is decreased significantly. When you have range problems, it is wise to try to locate the device which is attenuating the signals simply by unplugging devices from the power line, and

testing the differences in range for your Haibrain system. When e.g. your conclusion is that e.g. your computer monitor is attenuating the signal, you can use a FM10 Plug-in Filter between the power line and the monitor to eliminate the effects.

Known devices which can cause attenuation are:
- PC Monitors
- PC's with heavy internal power supplies
- Old Televisions
- Copiers
- Fluorescent Lights
- Gas Discharge Lamps (Energy Saving Lamps)

3. Some (old) devices are able to disturb the signal by transmitting noise on the power line. Because the Haibrain X-10 signals are transmitted on 120 kHz, only noise on or near this frequency will have influence on the range. When you use a FM10 Filter to connect this device to the power line, the noise will be filtered.

4. The Haibrain X-10 protocol has several mechanism to avoid modules to be switched on or off by other sources than your Haibrain X-10 Controllers. However, it is possible that the Haibrain X-10 signals are disturbed by e.g. baby phones which are in TALK mode (continuous transmission). When these kind of signals are present on the power line it is possible that the Haibrain X-10 signals will not come through.

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5. The mains do not stop at the front door of your home. Everything that is attached to mains nearby your home can have influence on Haibrain X-10 signals (e.g. heavy machinery). If you think that your system is influenced by devices out of your house, it is advisable to install FD10 Phase Coupler/Filter on each phase entering the house. These filters will block signals coming into or going out of your house, but will also match the impedance for the mains. The FD10's will not only filter but will also couple the phases (please see 1).

FAQ

What is the reason for modules to switch on/off spon-taneously?
It is possible that a Haibrain X-10 System is installed at one of your neighbours using the same House Code. To solve this problem try to change the House Code of your system, or have FD10 Phase Coupler/Filter installed at your incoming mains.

My modules will not respond to my controller.
Make sure that the House Code on all Modules and Con-trollers are set to the same House Code (A .. P).

My modules will not react to my remote / sensor.
When you use a remote or sensor, you should have at least one TM13 Transceiver or Haibrain Security Console in-stalled in your house. These components will translate the radio signals to the Haibrain X-10 signal on the power line. Only one Transceiver should be installed for all remotes and sensors set to the same House Code.

Am I able to increase the range of my remotes by using more Transceivers?

Yes, you can use more than one TM13 Transceiver in your home when the range of your remotes is not sufficient. The TM13 is using so called collision detection to prevent signals to be disturbed when more than one TM13 is transmitting. TM13's will wait for a quite power line before transmitting their data. To prevent your Haibrain X-10 System to become slow or to prevent dimming from becoming less smooth, make sure that the TM13 units are placed as far away from each other as possible.

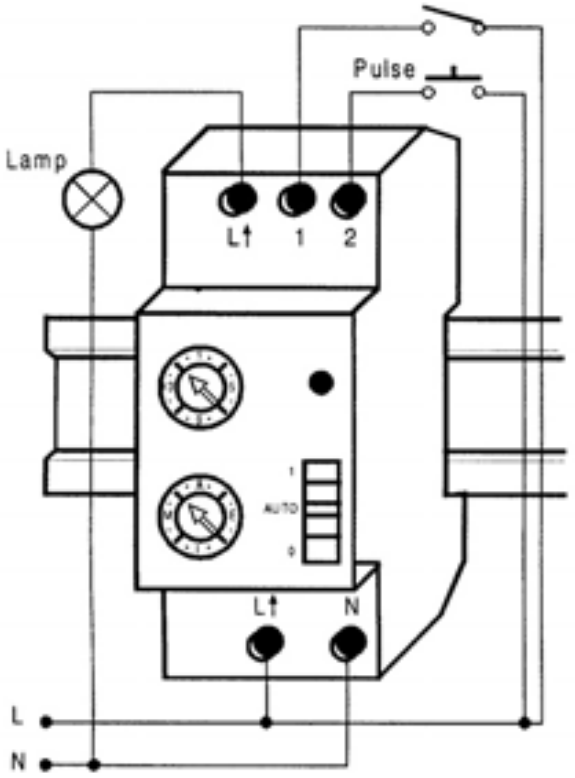
SWITCH OFF APPROPRIATE MAINS FUSE AND MASTER SWITCH! (Installation By A Certified Installer)

1. Mount the AD11 using the schematics below.
2. Set the rotary code switches on the front side to the desired address.

Description of the selector switch:

Position 0: Always Off
Position 1: Always On Position
Auto: Control with Haibrain X-10 Controllers and attached switches possible

Terminal 1 of the switch is designed for toggle switches: the relay picks up when phase is present and releases when there is no voltage at the terminal.



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Terminal 2 of the switch is designed for pulse contacts. Each time phase is applied, the relay switches (i.e. from OFF to ON or vice versa).

TECHNICAL DATA

Supply voltage	230V +10% -15% 50 Hz
Supply current	< 20 mA capacitive
Switching power	3600W/230V for resistive (ohm) load 700W/230V for inductive/capacitive load 2000W/230V for light bulbs and halogen lighting
Silent relay	Yes
Signal sensitivity	15 mVpp min 50 mVpp max at 120 kHz
Input impedance	> 180 Ohm (L - N) at 120 kHz
Connection	Connection: Connecting clamps for phase, neutral, switched phase, switch and momentary switch.
Ambient temperature	- 10° C to + 50° C (operation) - 20° C to + 70° C (storage)
Dimensions	35x80x70mm

Environmental Information for Customers in the European Union

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

DECLARATION OF CONFORMITY

Hereby, Haibrain BV, declares that this AD11 is in compliance with the essential requirements and other relevant provisions of the following Directives:

Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility

Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

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